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Mr. Lamont.—As far to the north-east as we penetrated, I saw several—not many—but several icebergs.

The President.—Carrying any terrestrial remains?

Mr. Lamont.—Those particular ones did not; but I distinctly recollect seeing two or three icebergs. I have been on the coast of Labrador, and know what real icebergs are; but these were the only heavy icebergs that I saw in the Spitzbergen sea.

The President.—Was there anything on them?

Mr. LAMONT.—Nothing on those ones.

Mr. Hickson said the object of his paper was to show what strong grounds existed for the conclusion that the Pole was accessible, and not exactly to place the Spitzbergen route in opposition to the route proposed by Captain Sherard Osborn. He wished to carry out the recommendation of Admiral von Wrangel, who in 1844 wrote to General Sabine in favour of an expedition by the Spitzbergen route; and at a later period was also in favour of an expedition by way of Smith Sound. In both cases the Admiral was perfectly consistent;—recommending a direct northern route in preference to the routes by the north-east and the north-west, which had been attempted during the last two hundred years, and which had failed in consequence of there being no outlet along the northern coasts of America and Asia for the ice formed in those high latitudes to escape. He should like to see expeditions in both directions, and trusted the time would come when the maritime nations of Europe would have nothing better to do with fleets prepared for war than to employ them for scientific objects. If, for the moment, either expedition must be given up, Spitzbergen offers the tempting advantages of a starting-point for exploration that may be reached every summer, by steam, in a fortnight, and of seas sufficiently wide to give a free passage to ice-floes drifting south.

The Secretary, Mr. Markham, then read the following reply, from the Council of the Linnean Society, to the invitation of the Royal Geographical Society to co-operate in a memorial to Government on the subject of a North Polar Expedition:—

SIR.

In reply to your letter of the 2nd of March, I am directed by the Council of the Linnean Society, to communicate to you the following Minute,

agreed to at their Meeting held this day:-

"The Council of the Linnean Society hear with the greatest satisfaction of the proposal for an expedition to explore the North Polar region. Concurring with the Council of the Royal Geographical Society in the opinion that important scientific results would be thereby obtained, that maritime adventure and voyages of discovery in the pursuit of science have an excellent effect upon the naval service, and that this expedition, in particular, would be in every respect worthy of the enterprise and prestige of the British navy, they have no hesitation in complying with the request to state their views on the various topics suggested by the Council of the Royal Geographical Society, in so far as they are connected with the pursuits of the Linnean Society, and for the purpose of being embodied in a joint representation of the principal scientific bodies, to be submitted for the consideration of Government.

"1. As to the popular objection to North Polar expeditions on account of the supposed danger, the Council cannot attach any weight to it, being convinced that it rests on a fallacy. The Linnean Society has, during the last half century, enrolled among its Members almost all the scientific officers of

the surveying and exploring expeditions of our naval and other public services. and has occupied itself largely with the publication of the results obtained in natural history. It has thus been deeply concerned in watching the progress of such expeditions, and in judging of the comparative amount of loss and hardship incurred; the results showing a remarkable immunity from danger exemplified in the Polar voyages, North and South, as compared with many With the exception of Sir John Franklin's party, it is believed that not one Fellow of the Society has met with his death through Polar discovery, whilst in those African Surveys and Explorations, which are so warmly supported, there are very few of the numerous contributors to our publications who have not perished in the prosecution of their researches, and the numbers lost in, or in consequence of, scientific expeditions in India and other tropical countries, and in the interior of Australia, have been most deplorable. These losses, however, have retained no hold on the public mind, for they have been unaccompanied by any great disappointment, such as that experienced in the ultimate failure of the persevering search for the phantom passage to the north-west, from which such grand results had been anticipated. The sad end of Sir John Franklin and his crew, and the long uncertainty as to their fate, may be considered, like those of Lapeyrouse, Mungo Park, Edward Vogel, Leichhardt, and many others, items of past experience, to serve rather as guides in future expeditions, than as warnings against undertaking them.

"2. With regard to the excellent effect of these expeditions on the naval service generally, the Council consider that they cannot speak too warmly in their favour. As a school for cultivating the powers of observation in the officers, and thus affording them a means of rising to distinction, they are unrivalled. And as a proof of the estimation in which this branch of the service is held on the Continent, the Council need only to point to the number of officers of our exploring service whom the Imperial Institute of France has elected to honorary seats in their department of Navigation; the highest

foreign scientific distinction which a British officer can attain.

"3. With regard to the particular route, or routes, to be selected amongst those which have been proposed, or to the officers to be employed on the service, the Council feel they they could not with propriety pronounce an opinion, as questions foreign to the functions of the Society they represent. They believe, however, that either of the two routes advocated might essentially contribute to fill up the present vacuum in our knowledge of the natural history of these high latitudes; and that by Smith's Sound, as coasting a greater extent of land, might, in respect of ethnology and some other branches of natural history, produce results of special importance.

"4. With regard to the specific results in natural history which may be expected from the proposed expedition, they are numerous and important; and a detailed report on them would involve considerable labour in its preparation. Such a report, however, the Council will gladly undertake to have prepared, whenever the project is in a fair enough state of progress to make it desirable to do so. In the present stage of the matter, it may be sufficient to

allude generally to the following heads.

"The most important results in Natural History to be obtained from a voyage to the Arctic Ocean, are undoubtedly those that would extend our knowledge of the conditions of animal and vegetable life in those regions. It is now known that the Arctic Ocean teems with life, and that of the more minute organized beings the multitude of kinds is prodigious. These play a most important part, not only in the economy of organic nature, but in the formation of sedimentary deposits, which in future geological periods will become incorporated with those rock-formations whose structure has only lately been explained by the joint labours of zoologists and geologists.

"The kinds of these animals, the relations they bear to one another and to the larger animals (such as whales, seals, &c., towards whose food they so largely contribute), the conditions under which they live, the depths they inhabit, their changes of form, &c., at different seasons of the year, and at different stages of their lives, and, lastly, their distribution according to geographical areas, warm and cold currents, &c., are all subjects on which very little is known.

"In connexion with this subject, and, indeed, inseparable from it, is a similar inquiry into the conditions of life of the microscopic vegetables with which the Polar seas equally swarm, and which both form the food of the microscopic animals and contribute to the sedimentary deposits above mentioned—the siliceous coating of their cells. These siliceous coats are indestructible, and being of irregular geometric forms, and the different kinds having differently and exquisitely sculptured surfaces, may be recognised wherever found, and at all future epochs of our globe; and a knowledge of the species inhabiting the Arctic Ocean would throw great light on investigations into the age of the rocks of our own island, and on the later changes of the climate of the Northern hemisphere.

"With regard to the larger animals, the fish, shells, corals, sponges, &c., of the Arctic zones, those of Greenland alone have been well explored. A knowledge of their habits and habitats is most desiderated, as are good specimen for our museums. More important still would be anatomical and physiological experiments and observations on these animals under their natural conditions.

in In botany very much remains to be done; not perhaps in the discovery of new kinds, but in tracing the distribution of those already known, in connexion with existing currents, and with the effects of the cold and warm epochs of the world's late history. It is well made out that the Arctic flora comprises three floras—namely, the Scandinavian, American, and Asiatic; but it has only recently been shown that these floras do not bear that relation to the geographical areas they respectively inhabit, which the existing relations of land and sea would lead us to suppose: thus the West Greenland flora is European, and not American; the Spitzbergen flora contains American plants found neither in Greenland nor in Scandinavia; and other anomalies have been traced which indicate great recent changes in the physical geography of the Polar land. To correlate and explain these anomalies requires a Natural History survey of the Polar area, and can only be accomplished by the joint labours of energetic officers, who could devote a considerable time to the subject."

I have the honour to be, Sir,
Your most obedient servant,

George Busk, Secretary.

To the Secretary of the Royal Geographical Society.

## NOTES TO MR. MARKHAM'S PAPER.

Note (A) on the Objection to the Smith Sound Route for North Polar Exploration, founded on the existence of Ice Obstructions in Baffin's Bay.

THERE are two roads to the North Pole—one by the Spitzbergen Seas, and the other by Baffin's Bay; and both these roads are barricaded at their entrances—one by the Polar pack, and the other by the middle ice of Melville Bay.